

REMARKS / ARGUMENTS

This amendment is in response to the Office Action dated July 9, 2003, the deadline to which has been extended by one (1) month from October 9, 2003 to November 9, 2003, by petition and payment of fee.

Claims 1-8, 11-13, 15-28, 31, and 33-36 remain pending in the present application. Claims 1-13 and 15-33 are rejected. Claims 1, 6, 7, 12, 13, 17, 19, 20, 25, and 26 have been changed and claims 9, 10, 29, 30, and 32 have been cancelled by this amendment.

35 USC §102 Rejection

The Examiner rejected claims 1-2, 7-8, 13, 15, 30 under 35 U.S.C. 102(b) as being anticipated by Damon (U.S. Pat. 4,338,717). Damon discloses an LED in a dual-in-line configuration received by a corresponding socket connected to printed circuit cards.

Applicant respectfully traverses the Examiner's rejection. Amended claim 1 includes a removable connection portion having electrical contacts physically arranged in the same configuration as electrical contacts of a cable connector. A visual indication portion is coupled to the removable connection portion. One embodiment of such electrical contacts is shown in Figs. 2 and 6 of Applicant's specification (e.g., elements 70-76 of Fig. 6).

In contrast, Damon discloses a light emitting diode (LED) in a dual-in-line configuration and a socket in the same configuration. These components do not have contacts in an arrangement of a cable connector. Rather, they are specifically designed for an integrated circuit package which has dual-in-line pins and sockets. These types of sockets are not known for interchangeability with cable connectors, and thus Damon's LED is limited to connecting directly to the socket on the printed circuit board. Applicant's invention allows a visual

indication structure to be connected to a standard electrical connector, which alternatively may connect to a cable connector. This has the advantage of allowing standard cable connectors (such as a ribbon cable connector), other than the removable connection portion, to be attached to the printed circuit board, as described throughout Applicant's specification, thereby allowing much more versatility and saving space on the circuit board. Damon mentions or suggests nothing about such interchangeability, nor is his device capable of such.

The Examiner stated that it would have been obvious to a person having ordinary skill in the art to use a ribbon cable to connect the connector of Damon, as suggested by Applicant's admitted prior art, for the purpose of extending the connection point. Applicant respectfully disagrees. Damon's use of dual-in-line packages for his LED and socket assumes that the LED will be directly connected to the socket; a dual-in-line configuration is used for directly attaching components to circuit boards. This configuration and package does not allow standard cable connectors (or any cable connectors) such as disclosed in Applicant's admitted prior art to be attached to the socket. Nothing in Damon suggests that such interchangeability is possible or even desired. Applicant therefore believes claim 1 is patentable over Damon. Claim 2 are dependent from claim 1 and patentable for at least the same reasons as claim 1 and for additional reasons.

Claim 13 recites a printed circuit board system including a printed circuit board, an electrical connector adapted to connect to a cable connector, and a visual indication structure adapted to removably connect to the electrical connector when the cable connector is not coupled thereto. For reasons similar to those explained above for claim 1, Damon does not disclose or suggest a visual indication structure that can be coupled to a printed circuit board connector, where the printed circuit board connector can also be coupled to a cable connector; nor is this

claim suggested by Applicant's admitted prior art. Dependent claim 15 is patentable for at least the same reasons as claim 13.

Claim 7 recites a removable visual indication structure including a removable surface mount connector and at least one surface mount visual indicator mounted to the removable surface mount connector without a cable. The removable connector has a surface mount connection, and at least one socket to receive at least one pin of an electrical connector. Damon discloses or suggests nothing about using a surface mount connection for a surface mount visual indicator; his LED and socket are in a dual-in-line configuration.

The Examiner stated that Heeb et al. (Patent No. 5,612,855) disclose surface mounted LEDs mounted to a circuit board, and it would be obvious to use the surface mounted leads for the structure of Damon, as suggested by Heeb, for the purpose of reducing size. Applicant respectfully disagrees.

Heeb discloses an LED adapter 1 that is surface-mounted (soldered) to a circuit board by leads 6 to pads 4, and a surface mount LED is surface-mounted to the adapter 1. Heeb mentions nothing about pins and sockets for his adapter, since the whole purpose of his adapter is to be connected directly to surface-mount terminals to position the LED at a particular height.

Applicant's amended claim 7 recites that the removable connector includes a surface mount connection for coupling the surface mount visual indicator, as well as at least one socket for receiving a pin of an electrical connector. There is nothing disclosed or suggested in Damon and Heeb for using a connector having both a surface mount connection and a pin-receiving socket as recited in claim 7. For example, if Damon were to use the surface mount technology of Heeb in his device, he would likely have provided a connector similar to Heeb's adapter, where the surface mount LED was surface-mounted to the connector, and the connector was surface-

mounted (soldered) to the circuit board. Damon might have oriented Heeb's adapter at a desired angle from the circuit board, similar to Damon's dual-in-line connector, since that is the expressed purpose of Damon's invention (col. 2, lines 36-40). However, there is no suggestion in either reference to use a removable connector that has surface mount connector (for a visual indicator) in addition to a socket for receiving at least one pin of an electrical connector.

Applicant therefore believes that claim 7 is patentable over the cited references.

In view of the foregoing, Applicant respectfully requests that the rejection of claims 1-2, 7-8, 13, 15, and 30 under 35 U.S.C. 102 be withdrawn.

35 USC §103 Rejections

The Examiner rejected claims 3-6 and 16-25 under 35 U.S.C. 103 as being unpatentable over Damon in view of Heeb et al. Applicant respectfully traverses. Claims 3-6 are dependent from claim 1. As explained above, the Damon does not disclose or suggest the removable connection portion and visual indication portion of claim 1. Heeb also does not disclose or suggest a visual indication structure that can be connected to an electrical connector which can also connect to a cable connector. Claims 3-6 are therefore believed patentable for at least these reasons. Claims 16-19 are similarly dependent from claim 13 and patentable for at least the same reasons as described above. Claims 20-25 recite a method for fabricating a removable visual indication structure for a printed circuit board, which is similar to claim 1 and is patentable over Damon in view of Heeb for at least similar reasons.

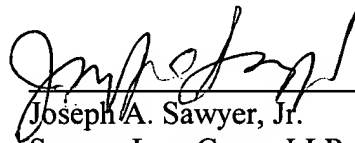
The Examiner rejected claims 27-29, 31, and 33 under 35 U.S.C. 103 as being unpatentable over Damon in view of Yagi. These claims are believed patentable for at least

similar reasons as explained above with respect to their various parent claims; Yagi also does not disclose or suggest the features distinguished above for claims 1, 13, and 20.

In view of the foregoing, Applicant respectfully requests that the rejection of claims 3-6, 16-25, 27-29, 31 and 33 under 35 U.S.C. 103 be withdrawn.

Accordingly, Applicant's attorney believes that this application is in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,


Joseph A. Sawyer, Jr.
Sawyer Law Group LLP
Attorney for Applicant
Reg. No. 30,801
(650) 493-4540